

# **PRE-HOLIDAY Winter Driving Safety**

# CONSIDERATIONS

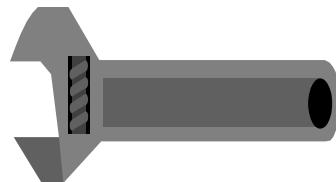
- Pre-operation
- During operation
- Emergencies
- Post-operation

# Pre-operation

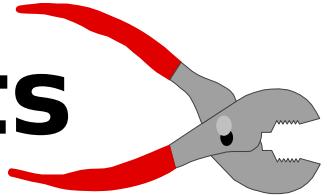
- Winter driving has special challenges. Cold weather is hard on vehicle components, seals, hydraulic/fluid systems.
- Ice and snow present operational challenges to drivers. During cold wintry weather, always allow extra time for travel; don't end up rushing into an accident.
- Check your vehicles mechanical status before you take to the road - are all systems ready?

# Pre-operation

- Cold weather engine starting and warm-up procedures apply. DO NOT RACE THE ENGINE!
- Clean the vehicle completely
  - Clean all lights
  - Scrape all windows and mirrors
  - Sweep all the snow off the vehicle
- Good all-around visibility is the first requirement for safe winter driving.
- Fluid level will be lower than normal until the vehicle is warm. Do not add fluid until you check the levels after the vehicle has warmed up.



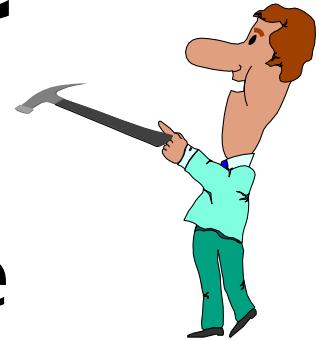
# Maintenance Points



- Proper maintenance habits are even more critical in cold weather.
- Antifreeze/coolant should be checked at regular intervals, at least twice per year. (SPRING/FALL)
- Ensure windshield washer is full with winter mix washer fluid

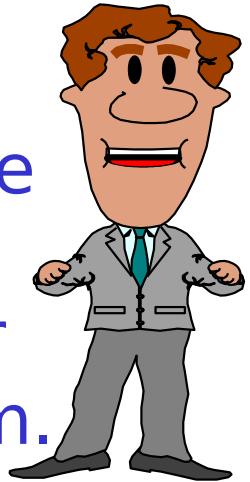
# More Maintenance Points

- When performing maintenance checks do not touch extremely cold metal with your bare hands.
- When checking water/antifreeze level do not open when hot.
- Remove jewelry prior to working on your vehicle.



# More Maintenance Points

- Keep fuel tank as full as possible to reduce moisture condensing inside fuel lines and freezing. Use gasoline antifreeze or other additive to remove water from fuel system.
- If you have air brakes -- drain air-brake air tanks each time you stop. Draining reduces build-up of moisture in air lines and subsequent freezing with loss of brakes.



# Defrosters

If defrosters are not available, use anti-fogging cloth or additive to treat window glass, never use hot water – it will crack the glass.

\* Check heater daily; carry towels to wipe glass.

At night --- cover the windshield when parked to keep frost and ice from forming on your windshield.

# Winter Driving Checklist

## Before Driving:

- ✓ **WINDOWS CLEAN**
- ✓ **WASHER FLUID IN RESERVIOR (winter mix to keep from freezing)**
- ✓ **WIPERS SERVICEABLE**
- ✓ **MIRRORS CLEAN AND ADJUSTED**
- ✓ **LIGHTS OPERATIONAL**
- ✓ **PROPER COOLANT, ANTI-FREEZE & OIL NO SUDDEN MOVES LEVELS**
- ✓ **TIRES SERVICEABLE**
- ✓ **ADEQUATE FUEL LEVEL (so you don't get stranded)**
- ✓ **CHAINS ON HAND**
- ✓ **BATTERIES and FLASHLIGHT**
- ✓ **EXHAUST SYSTEM**

## While Driving:

- ✓ **SEATBELTS ON**
- ✓ **DRIVING DEFENSIVELY**
- ✓ **REGULAR REST STOPS**
- ✓ **USING TURN SIGNALS**



## *Cold Hard Facts*

- *Adjust to Conditions*
- *Hills and Grades*
- *Following Distance*
- *Steering*
- *Skids*



# For Safe Winter Driving

## *Brake System*

To make an emergency stop on a slippery road with...

**Regular Brakes**

Pump the Brake Pedal.

**Antilock Brakes (ABS)**

Press down and hold.

The ABS will pump  
for you.

# For Safe Winter Driving

# *Drive System*

**Rear Wheel Drive Pushes**

and

**Front Wheel Drive Pulls**

The systems may feel a little different, but always steer in the direction of the skid, and make gentle corrections to regain

# For Safe Winter Driving

## *Light System*

**Do all your lights work?**

**Headlights properly aimed?**

**Dim your high beams in fog  
and to on-coming traffic.**

**Fog lights should only be on  
in low visibility conditions.**

**Do you know how to turn on  
the hazard lights?**

# For Safe Winter Driving *Tires*

**Do you know the speed rating?**

**Are the treads**

**4 millimeters\* deep?**

**Are all tires inflated to the correct pressure?**

**Do you have matching tire**

# For Safe Winter Driving

# Battery

## *Check Your Battery*



- Are Terminal Ends Free of Cracks or Corrosion?
- Are Cable Connections

# Operational Considerations

- **Driver Selection**
  - Familiarity with route
  - Alert and ready
  - Experienced at winter driving
- **Weather**
  - Get the latest forecast
  - Know the weather along route
  - Snow, fog, ice, black ice?
- **Road conditions**
  - Red
  - Amber
  - Green

# During Operation

- Take brief stops during extremely cold weather, let the engine run at a fast idle so that the alternator shows a positive charge.



- Burns fuel better
- Ensures battery charging
- Maintains even engine temperature

# Defensive Driving Techniques

- Drive at reduced speeds to be able to stop quicker.
- Give turn signals sooner than usual to give other drivers more time to react.
- Pump your brakes once, lightly, to signal your intention to stop.
- Maintain at least triple the normal following distance.

# Operating On Snow And Ice

- Drive in third, fourth, or top gear rather than first or low, to reduce tire spin.
- Engage manual transmission clutch gradually when starting motion to reduce tire spin
- For automatics, start slowly to reduce tire spin.
- Control your acceleration, speed, and following distance - let the vehicle coast-down in speed rather than jamming on brakes to control stop.

# Hills and grades

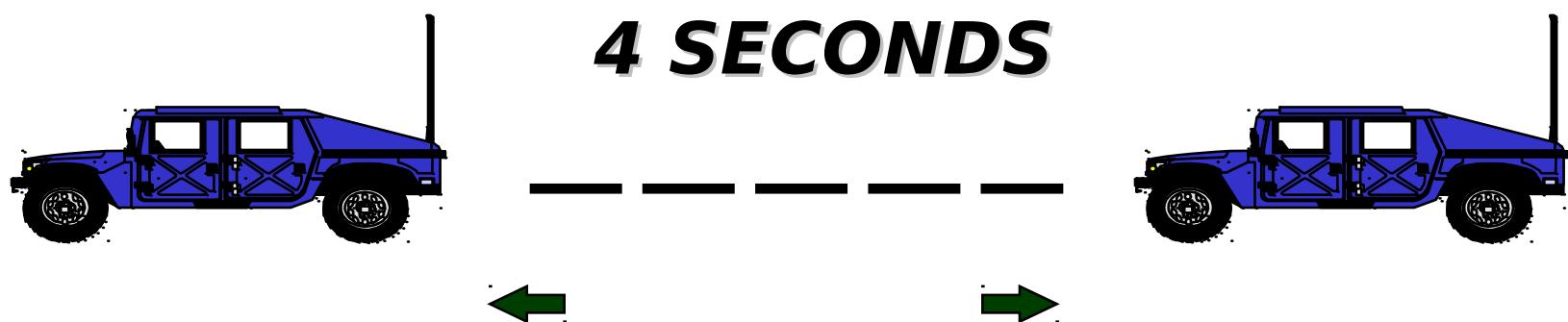
When approaching a hill or upgrade / downgrade remember to do the following:

1. Select the proper gear before approaching, usually a lower gear.
2. Use the same gear going down that you used going up. This will allow the engine to act as a brake, so you will not have to use your brakes excessively.

**\* On steep or very slippery grades, use at least one gear lower, and go slower. \***

# Distance

Three to eleven times more distance is required to stop a vehicle on pavement covered with ice or snow.

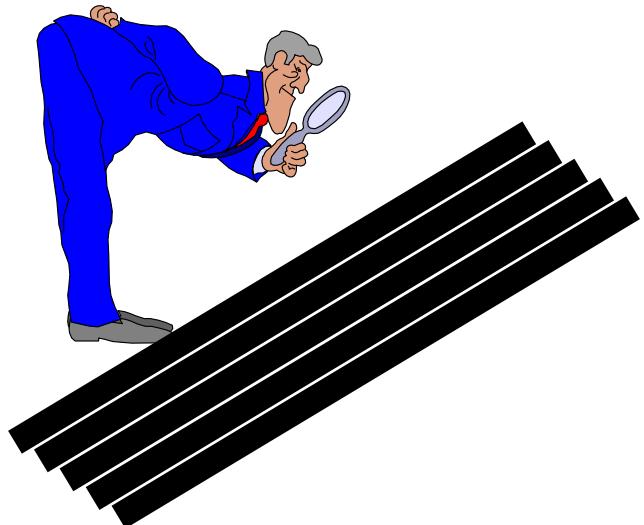


# BLACK ICE

Dangerous because you can't see it!

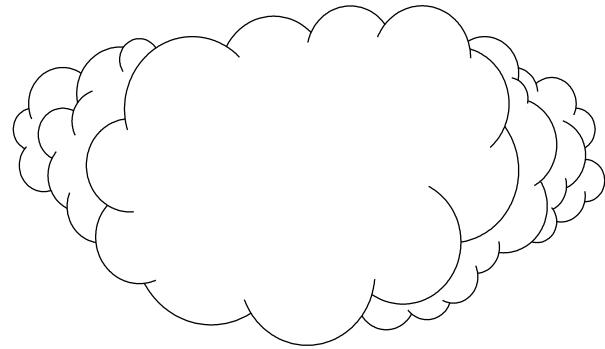
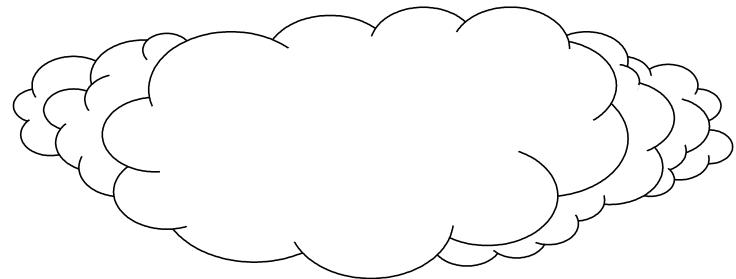
Common areas you find it:

1. Bridges/overpasses
2. Shaded areas

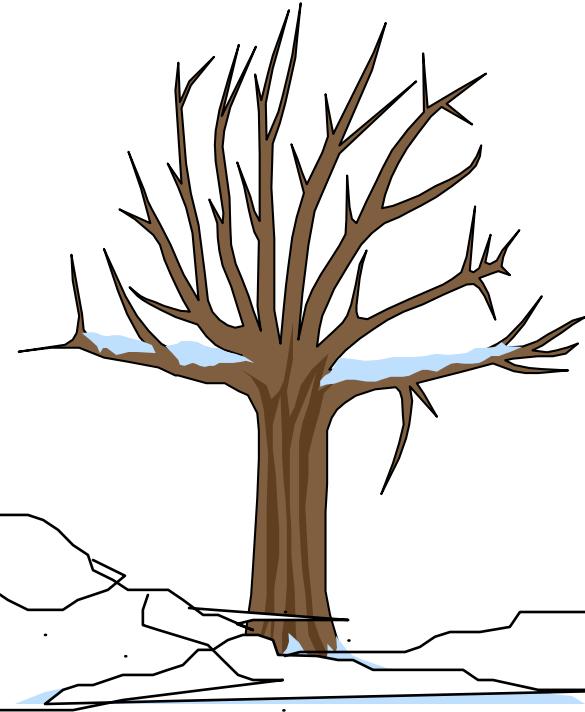


# **BLACK ICE**

- Do not panic!
- Make no sudden changes in speed or direction!
- Ease off accelerator!
- Steer gently, under control, in the direction the rear of the vehicle is skidding!



Fresh snow may  
conceal an icy road  
surface.



# SKIDS

Skids may result from:

- Black ice
- Driving too fast for conditions
- Sudden steering corrections or braking
- Sudden accelerations

# Skids (continued)

If your vehicle begins to skid, take the following actions:

1. Front end skids - release the brake and let the front wheels roll freely to regain traction and steering control.
2. Rear end skids - take foot off of the accelerator and turn wheels in the direction that the rear of the vehicle is skidding, and pump brakes lightly.

# **TIRE CHAINS**

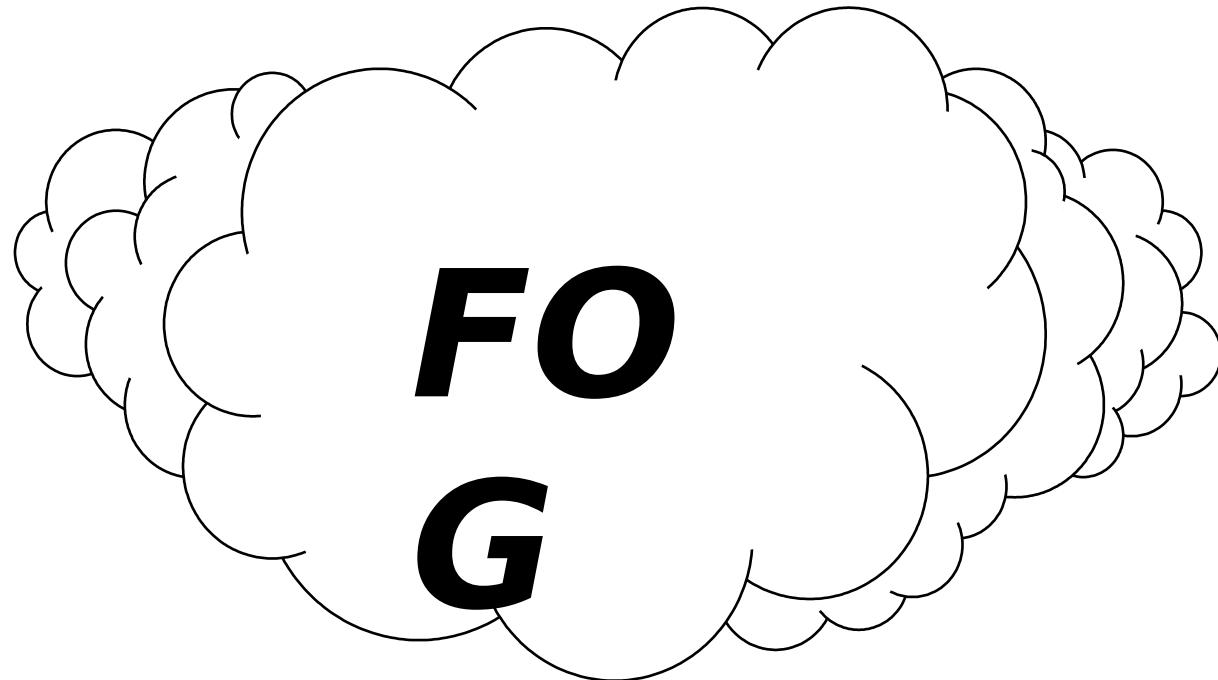
Before using, check the following:

1. Ensure vehicle specifications allow use of tire chains.
2. Check that tire chains are in good condition and locking ends serviceable.
3. Properly install the tire chains per manufacturer recommendations.
4. Go slow and use only when ice/snow present.

# TIRE CHAINS

Chains give a good bite in loose snow or mud but tend to slide and slip on ice and packed snow.





When driving in fog, use low-beam headlights.

If conditions deteriorate...

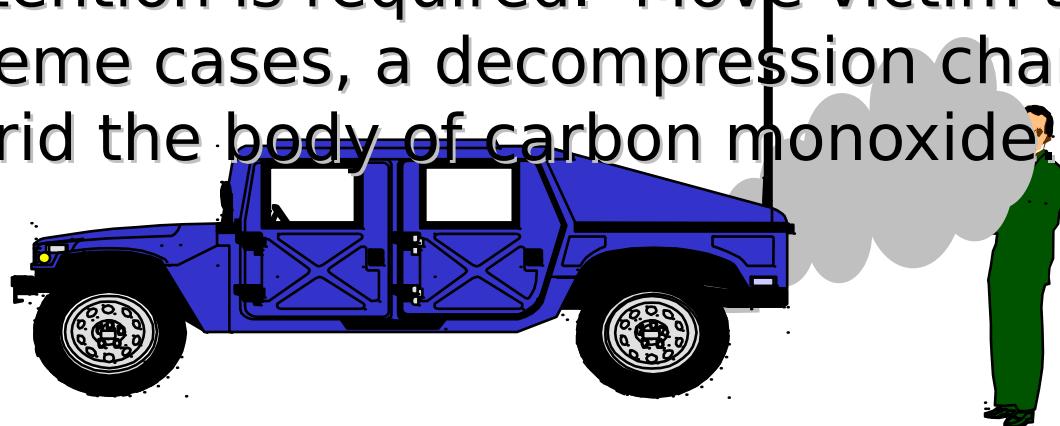
Stop, pull **completely** off the roadway, way off, and turn on the emergency flashers, and wait!

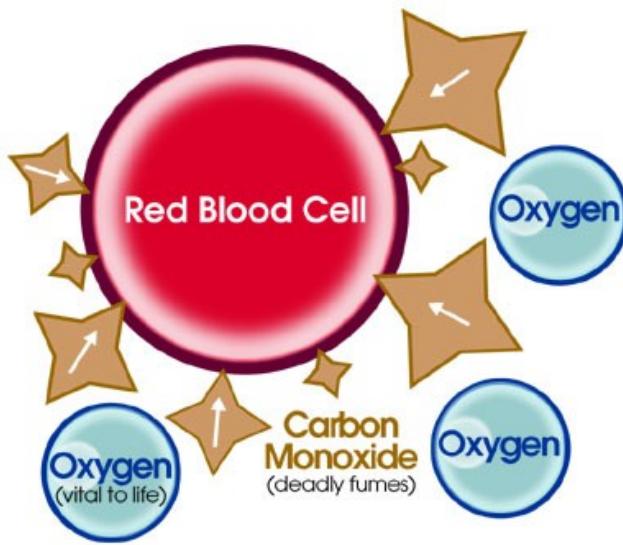
# **DANGER**

## **CARBON MONOXIDE POISONING**

Each year @1,500 people are killed in the U.S. by carbon monoxide, approximately 900 of these deaths occur in the home from portable heaters or the garage.

If over-exposed to dangerous levels, immediate medical attention is required. Move victim to fresh air. In extreme cases, a decompression chamber is needed to rid the body of carbon monoxide.





# DANGER

- Carbon monoxide is often referred to as CO, which is its chemical symbol. Unlike many gases, CO has no odor, color, or taste, and it doesn't irritate your skin.
- Red blood cells pick up CO more easily than oxygen. If there is a lot of CO in the air, your body may replace oxygen in your blood with CO. This disrupts respiration and gas exchange in the lungs; it can damage body tissues and kill you. Knowing where CO is found and how to avoid it can protect you from serious injury or death.

# Carbon Monoxide

Physical symptoms:

1. Nausea, dizziness
2. Headache, red skin
3. Sleepiness, slurred speech
4. Unconsciousness
5. DEATH

# CARBON MONOXIDE

## PREVENTION

1. Never idle engine for prolonged period with windows rolled up, particularly if snow is deep and covering exhaust pipe outlet.
2. Listen for exhaust leaks and promptly repair any defective exhaust components.
3. DO NOT sleep in a running vehicle.



# ***WINTER TRAVEL BAG***

## **Recommended Items**



- Arctic sleeping bag or enough blankets for vehicle occupants
- Wet weather gear
- Cold weather gear
- Water/some high energy food

# Post-Operation

1. Ensure that the vehicle cools down properly before shutting down the engine.
2. Attempt to park the vehicle so that the engine is not facing directly into the wind.
3. Raise the wipers away from the windshield to prevent the wipers from freezing to the windshield.
4. During extreme cold weather, the vehicle should be started every 4 hours to keep the battery charged.

# **SUMMARY**

- Cold weather greatly affects the operating performance of your equipment.
- Winter weather presents unique hazards (i.e., snow, slush, ice, black ice, etc.).
- Drivers must continually train and gain experience for safe winter driving.
- **SLOW DOWN!**
- **INCREASE INTERVALS!**